CH2IE

Proposed Rosemont Copper Project

DRAFT- NOT FINAL UNTIL INITIALED BY BEV EVERSON

Approved by:
___ Bev Everson
___ Tom Furgason
mm Mindee Roth
File in:
___ Administrative Record

ID Team Meeting
July 8, 2009

Attendees:

Forest Service	SWCA	Other
See sign-in sheet		

Topics Discussed:

- Concerns with internal communication
- Concerns regarding Rosemont's scope of contracts without consulting FS for needs
- FS specialist's need a list of all tech reports have been received
- Issue tracking sheet
- Format of issue statements

Decisions Made:

- Handouts need intro of what it is and what to do with it

Action Items/Assignments:

- IDT- text in ratings table by COB Wednesday, review issue statements
- Dale- 2D rendering of Barrel Only suggestion

July 08, 2009
Rosemont Copper Project
IDT Meeting Agenda

Location: Federal Bldg., Conference Room 4B, 300 W. Congress, Tucson, AZ.

Attendees: Proposed Rosemont Copper Company Project Core Interdisciplinary Team Members

Agenda:

9:00 – 9:15 – Overview of meeting goals, discussion of specialist communication protocol

9:15 – 9:45 – Review of issues

9:45 – 10:15 – Alternative summary, and refinement of alternatives to carry forward for analysis

10:15 – 10:30 – Break

10:30 – 12:00 - Refinement of alternatives, continued

12:00 – 12:30 – Lunch

12:30 – 1:45 – Refinement of alternatives, continued

1:45 – 2:00 – Break

2:00 – 3:30 – Rosemont Copper Company presentation of alternative components and mitigation

3:30 – 4:30 – Open discussion of team alternatives and company presentation

Proposed Rosemont Copper Project ID Team Meeting Sign-In

Date 7/8/09 Alternatives

First Name	Last Name	Role	Initials
Alan	Belauskas	*Noise*	
Andrea	Campbell	*NEPA Compliance/FOIA Officer*	
Bev	Everson	*ID Team Leader*	BE
Bob	Lefevre	*Air Resources, Clean Water Act*	BL
Camille	Ensle	*Presentation*	
Cara	Bellavia	*Social & Economic Environments*	
Chris	LeBlanc	*Heritage*	
Dave	Morrow	*Air Resources*	
Deanne	Rietz	*Hazardous Waste*	
Debby	Kriegel	*Light (Night Skies)*	DK
Deborah	Sebesta	*Vegetation, Reclamation, Wildlife*	
Eli	Curiel	*Hazardous Waste, Mining*	EC
Geoff	Soroka	*Vegetation, Reclamation, Wildlife*	
George	McKay	*Access/Lands/Realty*	
Glenn	Dunno	*Data Management*	
Harmony	Hall	*External Communications*	
Heidi	Orcutt-Gachiri	*Tech Editing*	
Heidi	Schewel	*Media*	
~~Janet~~	~~Jones~~	~~*Admin Support*~~ Doesn't work here	
Jeanine	Derby	*Forest Supervisor*	
Jeff	Connell	*Social & Economic Environments*	
Jennifer	Ruyle	*Forest Planner*	
Jerome	Hesse	*Geology*	
Joe	Ezzo	*Heritage*	
John	Able	*Communications Team*	
John	MacIvor	*SWCA Project Leader*	
Keith	Graves	*Recreation, Social & Economic Env.*	
Ken	Kertell	*Wildlife Resources*	
Kendall	Brown	*Range*	
Kendra	Bourgart	*Team Admin Asst*	
Kristen	Cox	*Light (Night Skies)*	
Lara	Mitchell	*Data Management*	
Larry	Jones	*Wildlife Resources*	
Marcie	Bidwell	*Recreation*	
Mary	Farrell	*Heritage*	
Melissa	Reichard	*Team Admin Asst*	MR
Ralph	Ellis	*Transportation/Engineering*	
Reta	Laford	*Deputy Forest Supervisor*	RL
Rion	Bowers	*Clean Water Act Compliance*	

Roxane	Raley	*Mailing Database*	
Salek	Shafiqullah	*Hydrologist, Hydrogeologist*	
Shane	Lyman	*Fire/Fuels*	
Suzanne	Griset	*Heritage*	
Tami	Emmett	*Access/Lands/Realty*	
Teresa Ann	Ciapusci	*Ecosystem Management & Planning*	
Tom	Furgason	*SWCA Project Manager*	
Tom	Skinner	*Water Resources/Riparian*	
Walt	Keyes	*Transportation/Engineering*	
William	Gillespie	*Heritage*	
DAVE	ORTMAN	SWCA	
Mindee	Roth	USFS	
Amy	Lynn	Engr.	
SARAH	DAVIS	Planning	
ART	ELEK	Fire/Fuels	

Proposed Rosemont Copper Project ID Team Meeting
Guest Sign- In
Alternative Presentation

Date 7/8/09

First Name	Last Name	Company & Role	
Brian	Lindenlaub	Westland Resources	Consultant
GL	Cheniae	Cheniae + Assoc.	"
[illegible]	[illegible]	[illegible]	[illegible]
Jamie	Sturgess	Rosemont	Project Manager
Kathy	Arnold	Rosemont	Environ Permit.
Bev	Everson	Coronado NF	Project Leader
Dale	Ortman	SWCA	[illegible]
Mindee	Roth	USFS	Project Oversight
Amy	Lynn	USFS	Engr - intern
[illegible]	Curiel	"	ENGR
George	McKay	USFS	[illegible]
Robert	Lefevre	USDA FS	Air Resource Spec
SALEK	SHAFIQULLAH	USDA FS	HYDROLOGY
Sarah	Davis	"	Planning Team
Tami	Emmett	USFS	Lands Realty Specialist
Reta	Laford	"	Deputy Forest Supervisor
Debby	Kriegel	USFS	Visual Quality + Recreation
Bill	Gillespie	USFS	Heritage Resources
Larry	Jones	USFS	Zoologist
Art	ELEK	USFS	Fire Prevention
[illegible]	[illegible]	[illegible]	[illegible]

Issue Theme Tracking Sheet

IAE: Issues Addressed in Effects, **IAP**: Issues Addressing Process, **OOS:** Issues Out of Scope for Analysis

				Issue		Recommendations			Significance Elements			
			Worksheet 1	Worksheet 2		Worksheet 4			Worksheet 3		Coversheet	
Theme #	Category	Theme	Non-Issue	Significant	Not Significant	Alternative	Mitigation	Other	Cause & Effect	Units	**Issue Statement**	**Final Line Direction**
1	AQ	Dust Pollution		x					x	x	**B**	**Combined 1**
2	AQ	Dust Control			x		x					**IAE**
3	AQ	Air Pollution other than dust		x					x	x	**B**	**Combined 1**
4	AQ	Air Quality Impact Analysis	x									**IAP**
5	ALT	Alternatives for Tailings & Waste Rock Disposal	x									
6	ALT	Alternatives to an Open Pit Mine	x									
7	ALT	Alternatives for Limiting Overall Project Boundary	x									
8	ALT	Alternatives for Limiting Times or Conditions under Which Mining Can Occur	x									
9	ALT	Alternatives for Employing State-of-the-Art Technologies to Reduce Environmental Impacts	x									
10	ALT	Alternative Water Sources for Mining Operations	x									
11	ALT	Other Alternatives for Reducing or Eliminating Impacts	x									
12	CC	Mine may contribute to climate change		x							**D**	**IAE**
13	CC	Mine may be impacted by climate change	x									**IAE**
14	CR	Mine impacts on Arch Resources		x					x	x	**C**	**2**
15	EJ	Disproportionate impacts on low income & minority		x					x	x	**F**	**IAE**

Back to SWCA to integrate into the appropriate resource area

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16	EJ	Inadequate opportunities for low income to participate in scoping	x									**IAP**
17	FM	Increased risk of wildfire		x					x	x	**O, Q, T**	
18	FM	Mitigation measures to reduce risk	x									**OOS**
19	FM	Availability of water to combat wildfire	x									**OOS**
20	HW	RCRA Hazardous Waste			x			Monitoring				**IAP**
21	HW	Mine may adversly affect emergency response	x									**OOS**
22	LU	Mine may conflict with existing laws & policies			x			Effects Analysis- Cumulative Effects				**IAP**
23	LU	Mine may lead to additional development	x									**OOS**
24	LU	Mine may result in lower aesthetic or property values	x									**OOS**
25	LP	Outdoor lighting		x					x	x	**I**	**3**
26	LP	Night Skies	x									**IAP**
27	LG	Degradation of Rangeland		Partial	Partial				x	x	**E & G**	**IAE**
28	LG	Traffic threats to livestock		x					x	x	**E**	
29	LM	Claim Validity	x									**OOS**
30	LM	Cumulative Impact of Past, Present, and Future Mines	x									**IAE**
31	Noise	Blasting Noise and Vibration, Truck Traffic, and Equipment Use		x					x	x	**H**	**4**
32	Other	Electricity	x									**IAP**
33	Other	Tailings	x									**IAE**
34	Other	National Security			x		x					**OOS**
35	Other	Financial Responsibility	x									**IAP**
36	Other	Smelter Capacity	x									**OOS**

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37	Other	Bridge renovation	x									**OOS**
38	Other	Resource Specialists	x									**IAP**
39	Paleo	Paleontological Resources			x		x					**IAE**
40	PP	Coronado National Forest Plan Revision	x									**IAP**
41	PP	Purpose and Need for the EIS	x									**IAP**
42	PP	NEPA Process Initiated Too Early	x									**IAP**
43	PP	Cooperating Agencies	x									**IAP**
44	PP	Consultation	x									**IAP**
45	PP	Public Meetings	x									**IAP**
46	PP	Mine Activities and the EIS	x									**IAP**
47	PP	Cumulative Impacts	x									**IAP**
48	PP	Mitigation Measures	x									**IAP**
49	PHS	Mine Operations and Public Health	x									**IAE**
50	PHS	Emergency Responders	x									**OOS**
51	PHS	Explosives Storage and Handling			x		x					
52	Rec	Reclamation Plan		x					x	x	**K**	**Combined 11**
53	Rec	Reclamation Bond and Financial Assurance	x									**IAP**
54	Rec	Reclamation Success	x									**IAE**
55	Rec	Post-Closure Development of the Project Site	x									**OOS**
56	Recre	Restriction, Disturbance, or Loss of Recreational Opportunities		x					x	x	**L**	**5**
57	Rip	Impacts to Riparian Habitat		x					x	x	**M**	**6**
58	Rip	Riparian Habitat and Property Values	x									

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59	Rip	National Conservation Area		x					x	x	**G**	**9? Or IAE**
60	Rip	Mandatory Mitigation	x									**IAP**
61	Socio	Local Economic Activity		x					x	x	**F**	**IAE**
62	Socio	Local Property Values			x			Effects Analysis- Direct & Indirect				**IAE**
63	Socio	Local Employment			x			Effects Analysis- Direct & Indirect				**IAE**
64	Socio	Social and Emergency Services			x			Effects Analysis- Direct & Indirect				**IAE**
65	S&Geo	Potential Soil Degradation		x					x	x	**O**	**12**
66	S&Geo	Potential Geologic Hazards			x		x					**IAE**
67	S&Geo	Blasting Vibration			x		x					**IAE**
68	S&Geo	Subsidence Due to Groundwater Withdrawal			x							**IAE**
69	SSS	Habitat Loss		x					x	x	**N**	**Combined 7**
70	SSS	Existing Conservation and Recovery Programs		x					x	x	**N**	**Combined 7**
71	TF	Financial Feasibility	x									**OOS**
72	TF	Technical Feasibility	x									**OOS**
73	TF	Legal Feasibility	x									**OOS**
74	Trans	Impacts to Existing Road Network		x					x	x	**Q**	**8**
75	Trans	State Route 83 Improvements	x									**IAE**
76	Trans	Use of Public Roads	x									**IAE**
77	Trans	Transportation Mitigation Measures	x									**IAE**
78	Trans	Rail Lines			x							
79	Veg	Unique Vegetation		x					x	x	**N & T**	**Combined 7**
80	Veg	Vegetation Moisture Availability		Partial	Partial				x	x	**G**	**IAE**
81	Veg	Vegetation Salvage		x					x	x	**N**	**Combined 7**
82	Veg	Vegetation Survey	x									**IAP**
83	Veg	Habitat Quality		x					x	x	**T**	**Combined 7**

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84	VRM	Direct and Indirect Impacts		x					x	x	**R**	**Combined 10**
85	VRM	Cumulative Impacts		x					x	x	**R**	**Combined 10**
86	VRM	Reclamation Timeline and Persistence of Impacts		x					x	x	**R**	**10? Or Combined 11**
87	VRM	Visual Resources Analysis Methodology	x									**IAP**
88	VRM	Consistency with Federal, State, and Local Visual Resource Management Objectives for the Area			x			Effects Analysis-CumulativeEffects				**IAP**
89	WR	Groundwater Depletion in the Mine Area		x					x	x	**G**	**Combined 9**
90	WR	Seepage from Mine Area Facilities		Partial	Partial				x	x	**G**	**Combined 9**
91	WR	Potential Waste Rock and Tailings Acid Rock Drainage		x					x	x	**A**	**Combined 9**
92	WR	Potential Pit Lake		Partial	Partial				x	x	**J**	**Combined 9**
93	WR	Loss of Recharge in the Mine Area			x				x	x		**IAE**
94	WR	Surface and Storm Water Control		Partial	Partial				x	x	**G, P**	**Combined 9**
95	WR	Groundwater Withdrawal in the Santa Cruz Valley			x							**IAE**
96	WR	CAP Water Recharge	x									**OOS**
97	WR	Mine Water Supply Pipeline		x					x	x	**R, L, N, T**	**IAE**
98	WR	Green Valley CAP Water Pipeline	x									**IAP**
99	WR	Seepage from Production Well and Water Pipeline Facilities	x									**IAE**

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100	WR	Alternative Mine Water Supply	x									**IAP**
101	Wild	Loss of Wilderness Characteristics		x							**S**	
102	WH	Habitat Modification		x							**T**	**Combined 7**
103	WH	Wildlife Behavior and Mortality		x							**T**	**Combined 7**
104	WH	Non-Native Species		x							**T**	**Combined 7**
105	WH	Impacts to Other Sensitive Areas in the Vicinity		x							**G & T**	**Combined 7**

FOR IDT CONSIDERATION

Elements	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Tailings Placement	Scholefield Canyon (441mcy)	Upper Barrel canyon (402mcy)	Sycamore Canyon (490mcy)	Sycamore Canyon (490mcy)	Upper Barrel (402mcy)
Waste Rock Placement	McCleary Canyon (902mcy)	McCleary Canyon (520mcy)	Upper Barrel (402mcy) + Upper McCleary (?)	West Barrel (?) + McCleary (520mcy)	West Barrel (?) + McCleary (520mcy)
		NOT ENOUGH CAPACITY			MAY NOT BE ENOUGH CAPACITY

Need Tailings 405 mcy
Need Waste & Heap 808 mcy

	Concept	Issue(s) addressed- Pros	Cons	Assignments
Proposed Action	MPO dated July 2007 plus the additions			
No Action	Don't accept the MPO (baseline of effects)			
Alternative 1	MPO as modified by Proponent			
Alternative	Relocate tails & waste to West side of ridge		Could increase longer timed visibility in Sahuarita and GV	
Alternative	Relocate the tailings pile/waste rock to Sycamore Cyn	Visibility along 83 and AZ trail and other trails & roads, groundwater drainage, less dense Arch sites, less impact to recreational use, impacts on Riparian in Barrel Canyon	Cost of hauling waste rock/tailing & buttress may need to be considered when choosing location, impacts to Riparian to Sycamore, Impacts to hiking in Sycamore, water quality impacts, impacts wildlife	Debby cc:Bev- digital Terrain files from Kathy- research any current visual models they have Dale- Figure out volume Sycamore can hold
Alternative element	Relocate the tailings around some Arch sites	Protect some burials		Mary F- highlight special sites to avoid
Alternative element/ mitigation?	Relocate OHV recreation to east side of SR 83			

	Concept	Issue(s) addressed- Pros	Cons	Assignments
Alternative	Remove ridge behind the pit	Less visual impact, would enable Rosemont to access more minerals,	possibly increase visibility from Sahuarita & GV, may have more tails and waste to increase footprint	
Alternative element	Slurry line pump the tails	Flexibility in tails location	Plant, access and power to plant at location where the slurry ends up.	
Alternative element	Conveyor belt transfer of ore and waste rock	May minimize risk to Rosemont Tallus Snail or other wildlife	There may be other claims in other locations precluding alternative.	
Alternative	Underground mine			SWCA need rationale
Alternative	Backfill Pit	Tribal requests to restore natural contours	Typically driven by bad pit lake chemistry, Real chance of contaminating ground water,	
Alternative	Partial Backfill			SWCA need rationale
Mitigation or Alternative	Use CAP water with groundwater backup	Less groundwater withdrawal, backup for CAP outages	Fine line walking with legalities of water rights. Need to work cooperatively with Rosemont. Need to consider the possible land development and current drawdowns	

	Concept	Issue(s) addressed- Pros	Cons	Assignments
Alternative element or Stand alone	Water retention dam in Barrel Canyon (or the canyon that facilities move to)	Could store storm water to contribute to ground water, Could this house CAP water to use for processing,	need to look at chances of ADWR permitting this or is this ADEQ's jurisdiction because of compliance plan, Reservoir could harbor bull frogs that could effect Chiricahua Leopard Frog, Cienega creek wildlife (T&E species)	
Alternative element or mitigation	Surfacing of Roads	Air quality- dust and haze, light pollution, improved soils and water quality	Expense, effect erosion & run off	
Alternative	Land Exchange	Costs of future management, tribal request	Discretionary action that the public doesn't like it. Very hard to hold Rosemont to the requirement. Doesn't go to P&N and doesn't decrease resource impacts. Could phrase alt. that results in the land exchange consideration will happen upon approval of the MPO. Is this within Forest Supervisor signing authority	SWCA rationale- doesn't meet P&N, would decrease impacts of future land management, possibly mitigation
Alternative	Government/Forest Service purchase the mine for US future consumption			Reta, Kent & Jeanine to consider

Mitigations

Lining tails & waste
Create wetland
Final reclamation to include trees, roads and trails on top of tails
Trucks hauling acid have a Spill Plan
Relocate legal public access roads
Need to preserve access to: Gunsight, AZ Trail and Sycamore
Public easement from Rosemont
Add public road section across primary and secondary access
Some way to re-establish ownership boundaries after operation at their cost
Authority of Small Tracks to sell small FS allotments amidst the private parcels
Compensatory land designations
Different slopes based on what reclamation is for (i.e. livestock, vegetation, erosion)
Smaller top, less slope of tails and waste
One Right-of-Way for utilities and roads
Alter trucking schedule around school buses
Convert ranch stock ponds to wildlife water areas
Create water features
Reconfigure/design toe of piles
Relocate popular trails
Co-locate a communication tower to improve coverage
Identify water sources for fire and installing hookups for both wildland and structural engines

To research:

Volumes of nearby canyons
GIS of all resource categories
Digital terrain map and other documentation already done for East and West side
What wildlife is downstream from Barrel Canyon
Surface water jurisdiction for retention pond- ADEQ or ADWR?
Other claims in the area (patented/un) including both sides of ridge

Issues	Horseshoe waste around Barrel canyon out to SR83/ tailings in either Sycamore or Scholefield *14*	Wrap around (Tailings in Sycamore and waste wrapped on west Barrel ridge and McCleary) *15*	Tailings in Sycamore Canyon/ Waste in Upper Barrel & McCleary *17*	Tailings in Upper Barrel/ Waste in McCleary Canyon *20*	Tailings in Scholefield Canyon/ Waste Rock in McCleary *21*	Proposed Action *18*	No Action	RCC's Proposed Response to Comments
Visual	Needs preliminary 3D	Needs preliminary 3D	Needs preliminary 3D	Needs preliminary 3D	Needs preliminary 3D	1	5	
Heritage Resources	3 (if Ballcourt can be avoided)	3	3	2	2	1	5	
Recreation	1	2	2	2	2	1	5	
Riparian	1	1	1	2	3	2	5	
Air	Comenserate to surface area	Comenserate to surface area	Comenserate to surface area	Comenserate to surface area	Comenserate to surface area	Comenserate to surface area	5	
Night Skies	Needs further information	Needs further information	Needs further information	Needs further information	Needs further information	Needs further information	5	
Noise and Vibration	3?	3?	3?	3?	3?	3?	5	
Plants and Animals	1	1	1	2	3	2	5	
Reclamation Plan	?	?	?	?	?	?	?	
Soils	1	1	3	3	3	3	5	
Transportation	3	3	3	3	3	3	5	
Water	1	1	1	3	2	3	5	

ROSEMONT COPPER
Resourceful.

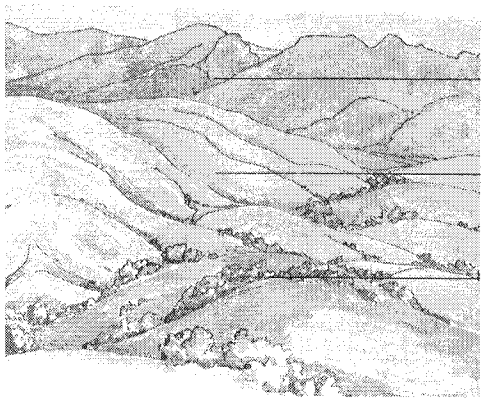
Alternative Development in Response to Scoping Comments Rosemont Copper

VISUAL

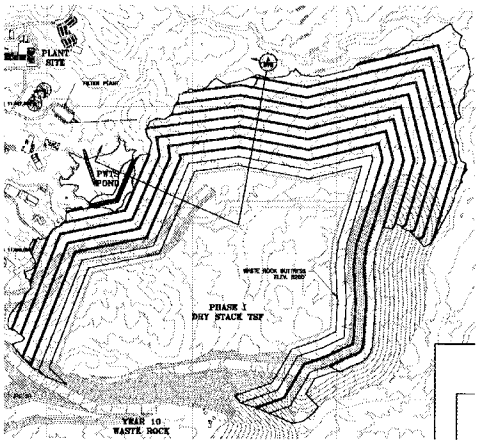
DHMRA – Diverse Habitat Mosaic Reclamation Approach

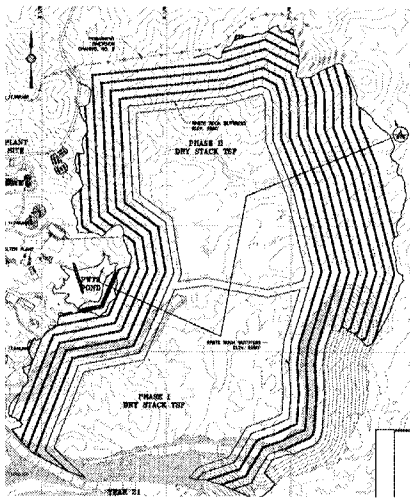
Visual - DHMRA

- Increase slope diversity on the perimeter of the waste rock and tailings areas
  - Vary slope angles, aspects, and contours
  - Align offslope drainage management to approximate terrain
  - Increase diversity of landscape surface soil and vegetation texture
- Increase priority to establish vegetation on the pit highwall



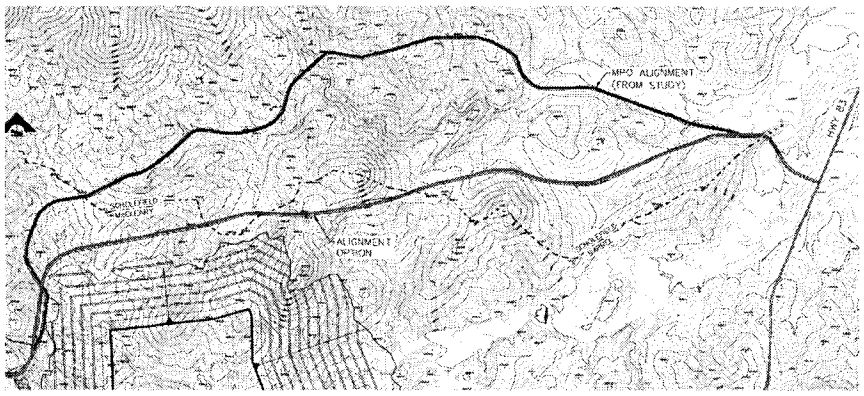
Visual - DHMRA





- Modify tailings sequencing

Visual - DHMRA



- Realign East Access Road to reduce overall footprint

TRANSPORTATION

OARI – Optimized Access Road Intersection

PARP – Park and Ride Program

Transportation

Mitigation Items:

- Provide design for truck turnouts along Highway 83
- Provide design for up to five school bus turnouts
- Participate in establishing Park and Ride areas
- Provide design for Acceleration/Deceleration lane for ADOT consideration

Transportation

- Upgrade design of State Highway 83 and Access Road Intersection to improve safety factors possible designs include
  - Divided highway pass-through lane
  - Dedicated turn lanes with an acceleration lane
- Establish program for employee and construction labor carpooling with off-site park and ride areas

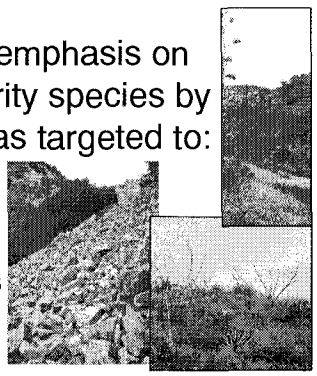
PLANTS & ANIMALS

SWWS – Sustainable Wildlife Water Sources

DHMRA – Diverse Habitat Mosaic Reclamation Approach

Plants and Animals

- Upgrade the Rosemont Ranch livestock water system with goal of one permanent surface water source in each of the individual pastures
- Upgrade the Reclamation Plan with emphasis on wildlife, native plants, and other priority species by identifying a habitat mosaic with areas targeted to:
  - Wildlife – vegetated travel corridors
  - Bats – agave
  - Snails – talus slopes and springs
  - Leopard frogs – perennial water sources
  - Livestock ranching



Plants and Animals

Mitigation Items:

- Provide fenced livestock exclosures for highest value riparian habitat on Rosemont Ranch private lands
- Implement specified areas of off-site mitigation to meet permit conditions or stipulations of ACOE, FWS, BLM, and other cooperating agencies such as the AGFD
  - •Identify and protect with fencing, that portion of the stock ponds in leopard frog habitat that would provide protection for frog habitat within the pond area
  - •Upgrade protection of selected bat habitat on Rosemont Ranch private lands

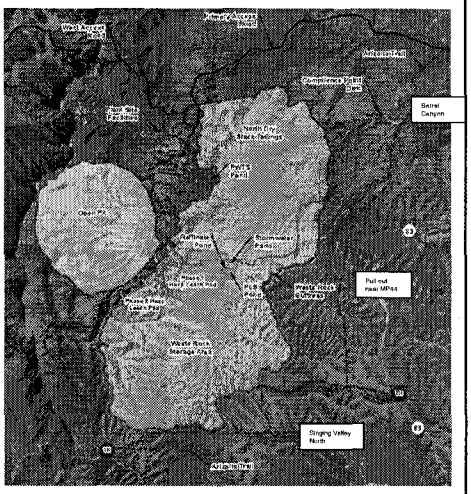
RECREATION

ATIS – Arizona Trail Interpretive Segment

CLOP – Cooperative Land Owner Program (AZ G&F)

Recreation

- Re-align Arizona Trail
- Re-align east access road
- Re-align west access to maintain recreation access
- Provide water station for horses along Arizona Trail
- Commit to place west side private lands in AZGF cooperative landowner program – safety permitting



Recreation

Mitigation Items:

- Provide interpretive kiosks along the Arizona Trail (through a grant)
- Public access or development covenants on private lands within forest boundaries where safety permits
- Develop new recreational trailhead on the east side of SR 83
- Complete additional Arizona Trail segment up to "Sentinel Peak" with an observation point

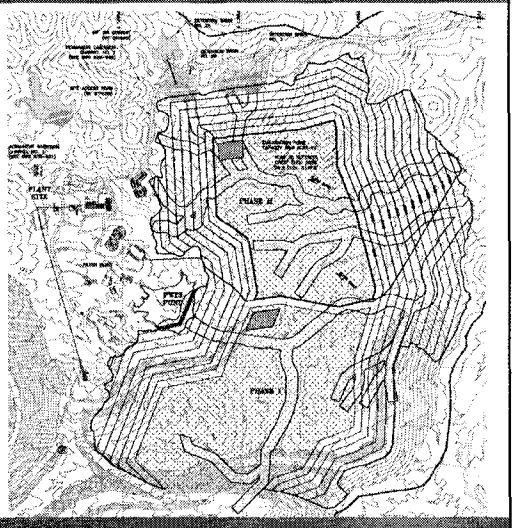
WATER

OFS – Optimized Facility Siting

IWMS – Integrated Water Management System

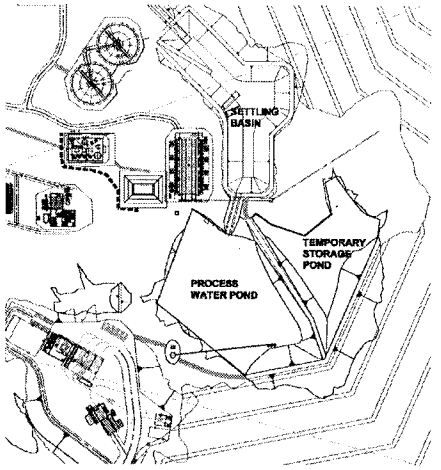
Water

- Revise the construction sequence for tailing storage to consolidate water management system and maintain downgradient flows to the maximum extent practicable
- Eliminate central drain and realign underdrain and surface water diversion networks
  - •improve spring management and routing with underdrains
  - •improve sediment management system with diversion design
- Increase number of SW ponds



Water

- Change design of PWTS pond
  - •Add process water storage
  - •Provide secondary/tertiary containment
  - •Segregate process/stormwater circuits
  - •Double liner on process water system
- Expanded size of tailing filter plant
- Relocate raffinate pond
- Realign pit diversion
- Relocated thickeners
  (minimize potential for differential settling)



Water

Mitigation Items:

- Implement the Sahuarita area residential well protection program currently under consideration
- Purchase and pre-store CAP water within Tucson Active Management Area at nearest available recharge site

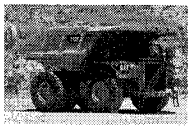
AIR

OFS – Optimized Facility Siting

PARP – Park and Ride Program

Air

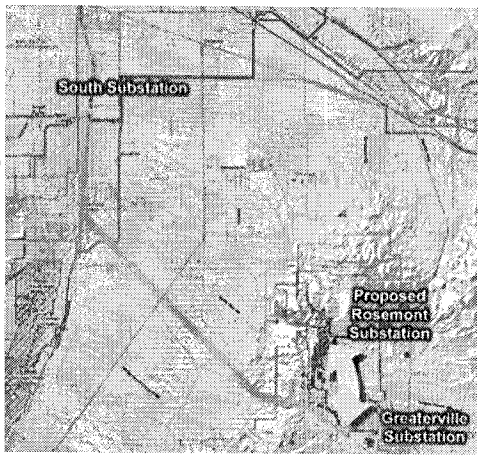
- Establish truck specifications to reduce emissions
  - Include Tier II diesel engines for haulage equipment
  - Investigate using larger haul trucks to reduce road miles
  - Increase ratio of water trucks to haul trucks



- Reorient internal haul road system to facilitate dust control
- Cover dry stack tailings conveyor at transfer points
- Set and enforce speed limits throughout operation access and haul road system

Air

- Limit on-site generation of construction power - power from Greaterville
- Submerge fill for fuel tanks to reduce VOC emissions
- Use low sulfur diesel fuel
- Secondary acid mist controls in the electrowinning tankhouse



Air

Mitigation Items:

- Commit to develop a dust management program for Santa Rita Road
- Develop a dust management program for Forest Service Roads on the west side of SR83
- Water sprays on gravel access road
- Car pooling for employee and contractor transportation
- Relocate Arizona Trail during construction of perimeter berm to maintain distance between public and operations areas

HERITAGE RESOURCES

OFS – Optimized Facility Siting

ATIS – Arizona Trail Interpretive Segment

Heritage Resources

- Provide visitor center near administration area and proposed trailhead at closure to provide information regarding heritage resources
- Avoid ball court in "Trail Creek" area

Mitigation Items:

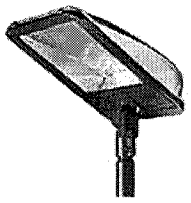
- Test historical and archaeological sites and do data recovery within project area
- Develop interpretive kiosks for cultural/historical sites along the Los Colinas segment of Arizona Trail

NIGHT SKIES

OFS – Optimized Facility Siting

Night Skies

- Hooded fixtures and directional lighting
- Assign light management program to a designated light monitor
- Minimize decorative lighting



Mitigation Items:

- Monitoring, auditing, and reporting of light emissions

NOISE AND VIBRATION

OFS – Optimized Facility Siting

Noise and Vibration

- Attenuated backup alarms – electronically modulated alarms
- Sequenced blasting using computerized controls and/or time delay technology
- Daylight hours only for blasting
- Prohibit jake-brake use on the eastern access road
- Enforce speed limits on operations

Mitigation Items:

- Monitor for noise levels at claim boundary
- Monitor for blasting effects

RIPARIAN HABITAT

OFS – Optimized Facility Siting

DHMRA – Diverse Habitat Mosaic Reclamation Approach

Riparian Habitat

- Realign access road to reduce riparian impacts
- Increase number and size of stormwater retention ponds to allow development of seasonal riparian features
- Redesign of surface water management features on top of the waste rock and tailings facilities to provide seasonal riparian areas following closure
- Phased tailings placement to leave McCleary Canyon open as long as possible during operations

Riparian Habitat

Mitigation Items:

- Provide fenced exclosures for highest value riparian habitat on private lands
- Exclude selected areas from livestock grazing that would have the potential for priority high quality riparian use during reclamation and post-mining
- Fence off a portion of livestock water areas for priority wildlife areas
- Identify and exclude a portion of the stock ponds in leopard frog habitat that would provide protection for frog habitat within the pond area

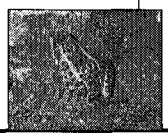
RECLAMATION

DHMRA – Diverse Habitat Mosaic Reclamation Approach

Reclamation

- Increase slope diversity
  - Contours
  - Drainage management
  - Texture
  - Vegetation types
  - Trees mosaics
  - Scree/talus slopes

- Design and implement reclamation mosaic targeted to:
  - Ranching
  - Wildlife
  - Leopard Frogs



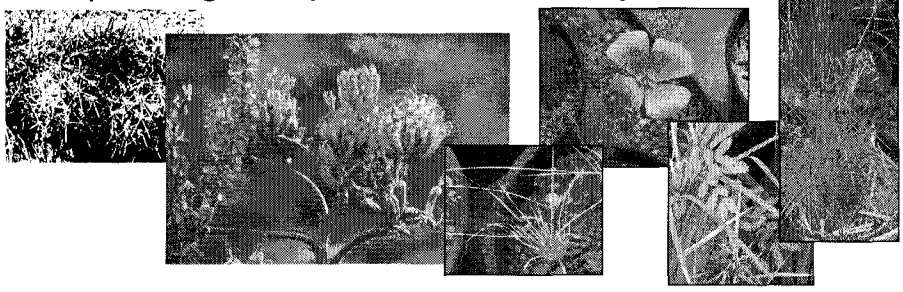
  - Snails
  - Bats

- Include "water features" in design to coordinate with stormwater system and provide opportunity for varying uses and habitats
- Provide areas where lower impact recreation uses may be appropriate

Reclamation

Mitigation Items:

- Include tree seeds in reclamation seed mix
- Replant agave species from nursery stock



SOILS

DHMRA – Diverse Habitat Mosaic Reclamation Approach

Soils

- Install test plots prior to mining to establish baseline conditions and soil treatment techniques – i.e. shallow ripping, deep ripping, surface placement
- Identify and utilize soil stockpile areas
- Integrate grubbing waste as organic matter into soil matrix
- Optimize soil placement for aspect

SOCIOECONOMICS

Socioeconomics

- Maximize metal recovery, reduce stripping ratio of waste rock to ore, extend economic life of project, and maximize economic benefit of project to proponent and to public
- Provide valuable copper, molybdenum, silver, and gold for societal use
- Provide third party financial assurance for closure, reclamation, and post closure monitoring

Mitigation Items:

- Develop community endowment program for $25 million permanent endowment and $500,000 annual contribution during mine life
- Support research into sustainable mineral development technologies
- Consider contributions of infrastructure development at close of mine life

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